

SECRET

NPIC/TSSG/RED-152/70
8 June 1970

MEMORANDUM FOR: Chief, Technical Services & Support Group, NPIC
ATTENTION : Chief, PPS/TSSG
SUBJECT : RED Monthly Report on Significant Events
(May 1970)

A. Significant Items of Interest for May 1970:

[Redacted Box]

25X1

2. ATR - Target Indexing Device - [Redacted] The change-in-scope for two magnetic tape units has been negotiated at a cost of [Redacted] and delivery is scheduled for 6 July. Due to a week's delay in receipt of electronic components, the preliminary system checkout has been shifted to 10-12 June. Unless there is a delay in receipt of the magnetic tape units, the program should remain on schedule. 25X1
3. Improved Rear Projection Screens - [Redacted] Parts for the sample lenticular screen have been completed and tested. Preliminary results indicate that, upon final assembly, an increase of between 75 and 85 percent in transmission (and gain) over previously available screens may be expected. 25X1
4. Viewing Systems Study. The contract for a Viewing Systems Study was successfully negotiated with [Redacted] Active work on this contract is scheduled to begin on 1 June. 25X1
5. Wide-Field High-Power Anamorphic Microstereoscope - [Redacted] After one year of negotiation, the contract for the Wide-Field High-Power Anamorphic Stereoviewer has been realigned to the mutual satisfaction of both parties. Initial work on Phase II of this contract--Optical and Optomechanical Design--actually began on 14 April 1970. 25X1

GROUP 1
Excluded from automatic
downgrading and
declassification

SECRET

Declass Review by

SECRET

- 25X1
6. Stereogram Printer Optical Study - [] During the past month, a decision was made to revise the magnification range from 2X-4X to 4X-8X. This will not only relieve resolution/bandwidth problems, but will halve the previously excessive size of anamorphic prisms. The optical design effort will cease in early June and emphasis will shift to a Final Report. The last day of work on this [] PAR will be 30 June 1970. The optical design, especially of the anamorphic collimation system, will not be complete. The Final Report will predict the optical performance of any follow-on effort and make appropriate recommendations. 25X1
7. Image Comparison Microstereoscope - [] On 6 May 1970 [] reported the need of approximately [] of additional funds and 20 weeks' time to complete the project. All work was stopped as of 8 May 1970. Nevertheless, incomplete cost accounts indicate they have exceeded authorized funds by some [] formal overrun request was received on 27 May 1970. Discussions were held that day and additional information was requested of them. Following receipt of such information, RED's recommendations will be forthcoming. They will include consideration of several alternatives to rework the anamorphic prisms, two sets of which were tested by the Project Officer and our optical consultant on 5-6 May 1970. 25X1 25X1 25X1
8. Automated Stereo Scanner - [] FY-1970 funding request for an engineering audit by [] and [] consultation with [] during the audit [] have been approved by the Director. We are carrying out the initial technical coordination between the companies during 1-5 June 1970. The equipment and drawings will be subsequently forwarded to [] for the audit. A related [] Stereo Scanning Utility Study approval package is being prepared within RED. Remaining funds of [] in an existing stereo scanning evaluation contract [] will be used for this effort; however, the total study will require future funds of [] In order to dovetail first phase deliverable items with the engineering audit, an early start up of the [] study is our goal. 25X1 25X1 25X1 25X1 25X1 25X1
9. [] visited [] to discuss our needs for a sensitometric color processor and a digital recording densitometer. He also requested a proposal for a study of Novel Chemical Processes. [] was authorized to proceed with an evaluation of SO-360 color duping material under the T&M contract. 25X1
10. [] - Proposals for two work orders were received from [] under the Photo Science Support Program. They covered the chemistry of unconventional photographic processes and applications of scanning electron microscopy. The proposals are currently being evaluated. 25X1

SECRET

SECRET

- 25X1
11. [] witnessed a demonstration of the Slide Home Theater at [] This unit displays 35mm color slides on the face of a color TV set and allows the color balance of the scene to be manipulated quickly using electronic controls. Slide imagery color could be manipulated; however, it remains to be shown that the technique will significantly affect color image interpretation and analysis. For this purpose, [] has consented to lend us a unit for demonstration and evaluation in the Center; it should arrive in June. 25X1
- 25X1
12. SPSE - [] attended the SPSE meeting in New York, 25X1
- 25X1
13. [] briefed [] representatives on the laboratory investigation of the Sabattier effect as a prospective technique for image manipulation. The purpose was to enlist [] assistance for evaluation of Sabattier-processed imagery in the PI function. 25X1
14. ORD Equipment Installation - The input/output equipment being fabricated by [] is now due for delivery in mid-August. Modifications of the required laboratory space have begun. 25X1
- 25X1
- 25X1
15. [] - The Optical Science Service contract has been signed. [] is preparing a course in photometry to be given at NPIC this fall. [] will work initially on coherence problems in microdensitometers. Both scientists are available for consultation. 25X1
- 25X1
16. PAR 251 - Ring Smear (PIM) - The photographic image enhancement experiments performed on operational material have been completed. The test imagery was examined by PI's in IEG, and they expressed very favorable responses. More detailed experiments will be conducted in FY-71. [] visited [] where he was trained in the Ring Smear Technique developed under PAR-251. 25X1
- 25X1
17. [] - The software package developed by [] is operating on the 360/67 at OCS. Preliminary experiments on operational imagery have begun. Progress is slowed by the lack of a display device at the computer site; action to rectify this situation has been initiated. 25X1
- 25X1
18. [] (OIM) - In-house research in optical image manipulation has made significant progress. Procedures for fabricating holographic filters have been developed and tested, and preliminary experiments to improve imagery degraded by motion have been successful.

SECRET

- 25X1
19. [] - Contract signed on 25 May 1970. Initial discussions between [] took place on 28 May 1970. 25X1
20. Power Spectral Density as a Quality Measure [] - The results of the first month's effort show that the technique can distinguish between image processed in dual gamma and single gamma chemistry. In addition, the problem created by the pelloid backing have been overcome. Tests with operational imagery will start this month. 25X1
21. [] lectured on "Color and Its Ramification" to an audience of 25 personnel on 22 May 1970. Attendees included the NPIC Color Committee as well as representatives of RED, SSD and APSD. 25X1
22. [] attended a meeting with Agency legal counsel personnel and the Chief, TSSG, on 25 May 1970 regarding SDS harassment of the DIM program and personnel. 25X1
23. [] attended the Intelligence Engineering Systems Analysis Course at Headquarters on 1 May. 25X1
24. The proposed color training contract with [] [] was briefed to the Executive Director, NPIC; Chief, PPBS; and the Group Chiefs on 4 May. The PAR was then forwarded to PPBS. 25X1
25. [] Commander of the 3428th Technical Training Squadron, Offutt Air Force Base, and several of his staff members of the PI training facility were briefed on 18 May on NPIC's proposed color training contract. [] offered the services of his facility to support the effort. 25X1
26. A series of technical discussions relative to the effect of ultra-violet radiation from light tables were held among various components of the Center, with [] charged with the responsibility of determining acceptable limits of emission. Contact was made with [] 25X1
- [] offered the services of an Agency consultant ophthalmologist/physicist, [] who will meet with Center personnel early in June. 25X1
27. [] presented a proposed follow-on action for the Mid-70's PI Workstation Concept to Chief, PPBS, and Staff on 20 May. The meeting was preliminary to [] reporting a recommended course of action to the Executive Director, NPIC. 25X1

- 25X1 28. [] visited [] 4-8 May 25X1
in preparation for the FY-71 human factors research program, and
to review current research activities.
- 25X1 29. [] ORD, were briefed
20 May on the Center's human factors
research program. [] ORD, were
scheduled to return to the Center in June for a more extensive
discussion.
- 25X1 30. Extensive discussions were held with APSD/TSSG, ESD/TSSG, PPS/TSSG,
25X1 RED/TSSG, IEG, PPBS, and PSG personnel prior to and during the 20-
22 May visit by [] personnel for the purpose of planning the
FY-71 [] related human factors research program. Plans were
then formulated to have representatives from the various Center
components involved in human factors research meet with [] consul-
25X1 25X1 tants and representatives of the [] for the purpose of
structuring the follow-on research. It is currently planned to hold
this conference at an Agency facility 4-5 June.
- 25X1 31. Preparations were made for [] personnel and [] 25X1
[] RED optics consultant, to visit [] 25X1
and the [] to evaluate the 25X1
feasibility of a wide-screen virtual image viewer, and to discuss
the research in pattern perception being conducted at the Institute
[] Both topics are being con-
sidered for inclusion in the follow-on human factors research contract
with the []
- 25X1 32. On 27 May, a contract monitoring trip was made to [] 25X1
on the PAR-255 subtask of Contract [] Purpose of the visit was
to examine the imagery processed by [] for use in the FY-71 Ground
Order-of-Battle Resolution Study. The decision was made to go ahead
with photographic manipulation in controlled resolution steps of
five target scenes, 3 from Fort Meade, 1 each from Aberdeen Proving
Ground and Redstone Arsenal. 25X1
- 25X1 33. A pilot study was conducted by [] in IEG to 25X1
identify problems associated with the [] target training effort. 25X1
[] under subcontract to [] tested 6 interpreters on a
trial training package for tank identification in preparation for
the subsequent development of packages for 20 high priority targets. 25X1
- 25X1 34. A proposed change-in-scope to the current [] human factors 25X1
contract for the purpose of designing a chair suitable for photo-
interpretation activities was returned to RED from PPBS for a cost
breakdown by task. The information was obtained from [] and 25X1

SECRET

forwarded as requested. Were the task to be initiated by 15 June, all activities except for the actual configuration of the mock-up could be accomplished prior to 23 August, termination date for the existing contract.

- 25X1
25X1
35. [] CIA representative to the Color Task Force, requested that [] assess the feasibility of systematically evaluating the "green record" prints derived from operational SO-242. Discussions with APSD personnel have led to the conclusion that there is not sufficient operational photography on hand at this time to conduct such an evaluation and meet a 1 September deadline as requested by []
- 25X1
25X1
36. [] personnel attended several briefings on the IIS in preparation for proposed human factors research in the general area of automated display systems.
37. Calibration Device for the High Precision Stereo Comparator (HPSC)- The contract has been let with [], for the development of a calibration device for the HPSC. Procurement of the special low coefficient of expansion glass is underway. Arrangements are also being made for the engraving of the scales on this glass. 25X1
38. Dry Silver Materials - Standards have been set for the type of dry silver negative acting material (negative-to-positive) required by Westover Special Projects Processing Facility (SPPF). This material is required for the testing of the High Speed Dry Silver Processor under T&E at SPPF. The [] cleanroom pilot plant coating facility will start producing this material in quantity at the best possible quality level.
- 25X1
25X1
- On 15 May 1970, [] personnel demonstrated the use of a simple device for the processing of their new heat processed Diazo photo-reproduction material. The material was exposed on the [] Rapid Interpretation Printer Processor (RIPPS) and simply placed on the heated processing unit for development of the image. This unit (a modified Model #71) has been loaned to IEG PI's for their use and comments. This unit would cost about [] It may be an inexpensive but acceptable way to process heat-process Diazo in the PI areas. 25X1 25X1
39. High Precision Stereo Comparator (HPSC)- The optical system was shipped from [] and it arrived at the [] plant on 24 May in good condition. The correlation system passed acceptance tests at [] and is being shipped to [] is presently integrating the optics into the total system. A change-in-scope has been approved to increase the memory of the HPSC computer by 16,000 words. 25X1 25X1

SECRET

SECRET

40. Research in Mensuration Instruments - The ExO/NPIC was briefed on this new project and the approval package has been forwarded. Five tasks will be researched under this contract over a six-month period.
41. Scan and Search PI Station - The design of this instrument has been completed by [] The ExO/NPIC and Group Chiefs have been briefed on the fabrication phase. The approval package for a contract to fabricate this instrument has been forwarded.
42. Step-and-Repeat Printer - The approval package has been forwarded for a preliminary design of this printer. NPIC briefings have been completed.
43. Modification of Twin-Stage Comparator - A contract has been awarded the [] to modify the positioning controls of this comparator. Handwheels will be used for fine positioning and a joystick for rapid, coarse movements.
44. Chip Implementation Study - The contractor will visit the Center during June for a preview of the Phase I Technical Report due in July 1970. The contract completion date has been extended to December 1970 with no additional funding. The progress of the study has been hampered due to the problem of clearing personnel.
45. Retrofit Film Transport Kit - The retrofit film transport kit, which was built under contract by [] has been delivered to the Center and is in T&E.
46. 10" Stage Comparator - The approval package has been signed off and negotiations are currently underway.
47. Filar Eyepiece for Zoom 240 - This contract was negotiated and then cancelled. Cancellation was recommended when the Center decided to modify the Zoom 240's with image rotation elements. The proposed Filar Eyepiece would not fit on the modified Zoom 240.
48. 1540 Light Tables - Both prototype 1540 light tables have been returned to the contractors for correction of faults discovered during testing and evaluation. Inspection trips will be made to [] on 4 June and [] on 8 June to review the success of the corrections.
49. UV Rear Projection Viewer - Phase II of the UV Rear Projection Viewer project has been approved. This phase will produce a functional breadboard of the instrument so as to demonstrate the concept of a self-luminescent screen.

SECRET

SECRET

50. Modification of Chip Viewers - The first of four [] Chip Comparators has been modified by [] to improve the focusing mechanism of the instrument and to improve the coolant leakage problem. The modifications are presently being evaluated. 25X1 25X1
51. Light Table Vibration Study - A contract has been signed with [] [] to analyze and demonstrate improvements in the light table vibration problem. A representative of that company recently visited NPIC to review the problem and become familiar with the light tables. 25X1
52. 1540 Light Table Production Units - Technical requirements for the production units of both the [] 1540 light tables have been completed. 25X1
53. Tracking Light Source - Development objectives for a High-Intensity Tracking Light Source are being written and should be completed shortly. This project is directed toward providing light tables with a 25,000 feet lambert light source of limited area.
54. [] attended a symposium on image amplification in New York, 18-22 May 1970. 25X1
55. [] gave a briefing on the Scanning Microdensitometer that [] is building for Westover. 25X1 25X1
56. On 25 May, [] completed the requirements for a B.S. degree, major in mathematics, at George Washington University. 25X1
57. [] gave several briefings on recommendations for follow-on to the Mid-70's PI Workstation effort to [] [] and [] will be briefed early in June. 25X1 25X1
58. [] prepared an interim report for EXRAND on the status of the Development of Exploitation Equipment in the EXRAND community. 25X1
59. [] has arranged for a repeat of [] color perception briefing to be given at 1430 on 16 June 1970. 25X1
60. [] with the help of all RED Branch Chiefs and [] prepared and submitted the RED operating budget for FY-71. 25X1
61. [] briefed a group of new IEG employees on the NPIC R&D program. 25X1

SECRET

SECRET

- 25X1 62. [] briefed members of the Operations Division, IEG, on bases for the performance design constraints on the [] Production Oriented Color Enlarger. 25X1

B. Anticipated Items of Interest for May 1970.

None.

- 25X1 C. See Attachment [] for the report of RED/RSB significant events for May 1970.

[]
Deputy Chief,
Research & Engineering Division,
TSSG/NPIC 25X1

Attachment:

Distribution:

Orig. & 5 - TSSG
2 - TSSG/RED

SECRET